

Title (en)

WIDE-ANGLE MOTION DETECTOR WITH CLOSE-IN REFLECTOR

Title (de)

WEITWINKEL BEWEGUNGSDETEKTOR MIT NAH ANGEBRACHTEM SPIEGEL

Title (fr)

DETECTEUR DE MOUVEMENT A GRAND ANGLE COMPRENANT UN REFLECTEUR A COURTE DISTANCE

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Application

EP 94930637 A 19941004

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Abstract (en)

[origin: WO9510056A1] A passive infrared motion detector with wide field of view extending to greater than 180 degrees that can be achieved in a cost-effective manner using a single sensor. The motion detector includes a planar infrared sensor (12, 46) and two or more infrared-reflecting faces (16, 17 and 41, 42) which are positioned close to and overlying at least a portion of the sensor. The reflecting faces are configured so that their ends proximal to the sensor overlie the sensor at its midportion and the faces extend from the midportion in different directions away from one another to reflect radiation to the sensor from different sides of the sensor. In one embodiment the reflecting faces (16, 17) form a generally prismoidal shape (11). In another embodiment the proximal ends (43, 44) of a pair of faces (41, 42) are displaced laterally from one another over the sensor so that the overlying faces obstruct a portion (51, 53) of the sensor and leave a portion (52, 54) unobstructed to form a checkerboard pattern of obstructed and unobstructed regions. The reflecting faces are positioned close to the sensor with their proximal ends spaced apart from the sensor at most a distance comparable to a characteristic transverse dimension of the sensor. Because of the close proximity of the mirror to the sensor, the area of the reflecting surfaces need not be very large and may be made comparatively small. The mirror surfaces deflect infrared energy from a suitable focusing means (13) onto the sensor from a plurality of zones so as to extend the lateral extremities of the motion detector field of view. Configured in this way, motion detectors may be provided with viewing angles at least up to 220 degrees using a single sensor. The reflecting faces may be formed together with a base from a single member (31, 61), which also is shaped to receive and hold an integrated-circuit sensor package (22). The unitary reflecting head and base portion can be mounted directly on a printed circuit board (34) and the reflecting faces are automatically aligned correctly over the sensor.

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